Continuous production of glass-...

melting metal drop; 12 -- the hollow part of the glass tube filled with a neutral or inert gas (argon). The original portion of metal weighs 3-4 gram. The electromagnetic forces of interaction between the eddy currents in the metal and the inductor field, and the adhesive forces of the liquid metal interacting with the softened wall of the glass tube keep the metal drop in suspension. From the heated and softened part of the glass tube a thin glass capillary is formed which simultaneously fills with the molten metal, resulting in a continuous fine thread consisting of glass and metal. This glass-coated cast iron micro-gauge wire is drawn at a speed of 3-5 m/sec; one drop yields a length of 2-3 km. The glass tube is automatically lowered at a rate of 0.02 - 0.10 mm/sec while the metal drop is also automatically supplied with solid metal. The most suitable metals or alloys for this purpose are those which possess a surface tension of 1,000-1,300 erg/cm^2 at an overheating temperature of 1,000-1,300° C. A higher overheating in the metal drop leads to excessive softening and destruction of the glass sheath. According to A. M. Korol'kov (Ref. 8: Sb. Eksperimental'naya tekhnika i metody

Continuous production of glass-...

issledovaniy pri vysokikh temperaturakh ((Experimental Techniques and Methods Employed in High Temperature Research)), Trudy soveshchaniya, Izd. AN SSSR, 1959), an addition of up to 2% of tin, bismuth or other deactivating elements considerably contributes to the reduction of the surface tension of the melt at lower overheating temperatures. Since the thermal expansion factors of glass and the ferrosilid type cast iron are almost equal, a combined glass-metal material is obtained which is distinguished by anisotropic properties. The temperatures of the metal drop and the walls of the glass tube are essentially affected by the convective air jet cooling process which might be used to a certain extent for regulating the internal and external diameters of the forming microcapillary of glass. Water cooling prevents the metal core from breaking and exerts a certain control over the plasticity and drawing of the glass sheath filled with metal. Crystallization of the metal is almost ideal; there are no micro-flaws and the metal surface is almost polished. Quality control is carried out by a radio control

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Continuous production of glass-...

set measuring the electric conductivity and the integrity of the metal core during the manufacturing process. The УМП-2 (Fig. 2) (UMP-2) semi-automatic apparatus is used for fabrication of cast iron micro-gage wire, simultaneously covered with a micro-gauge glass insulation. The machine does not reqest too much space and is operated by one man.

Figure 1

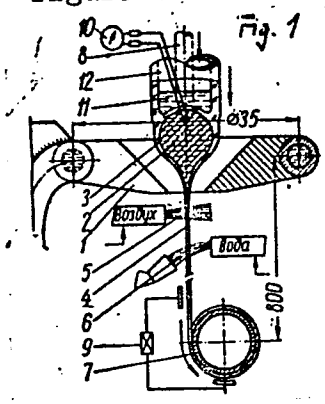
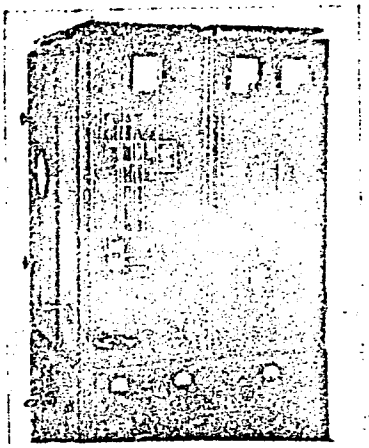


Figure 2 UMP-2 semi-automatic apparatus

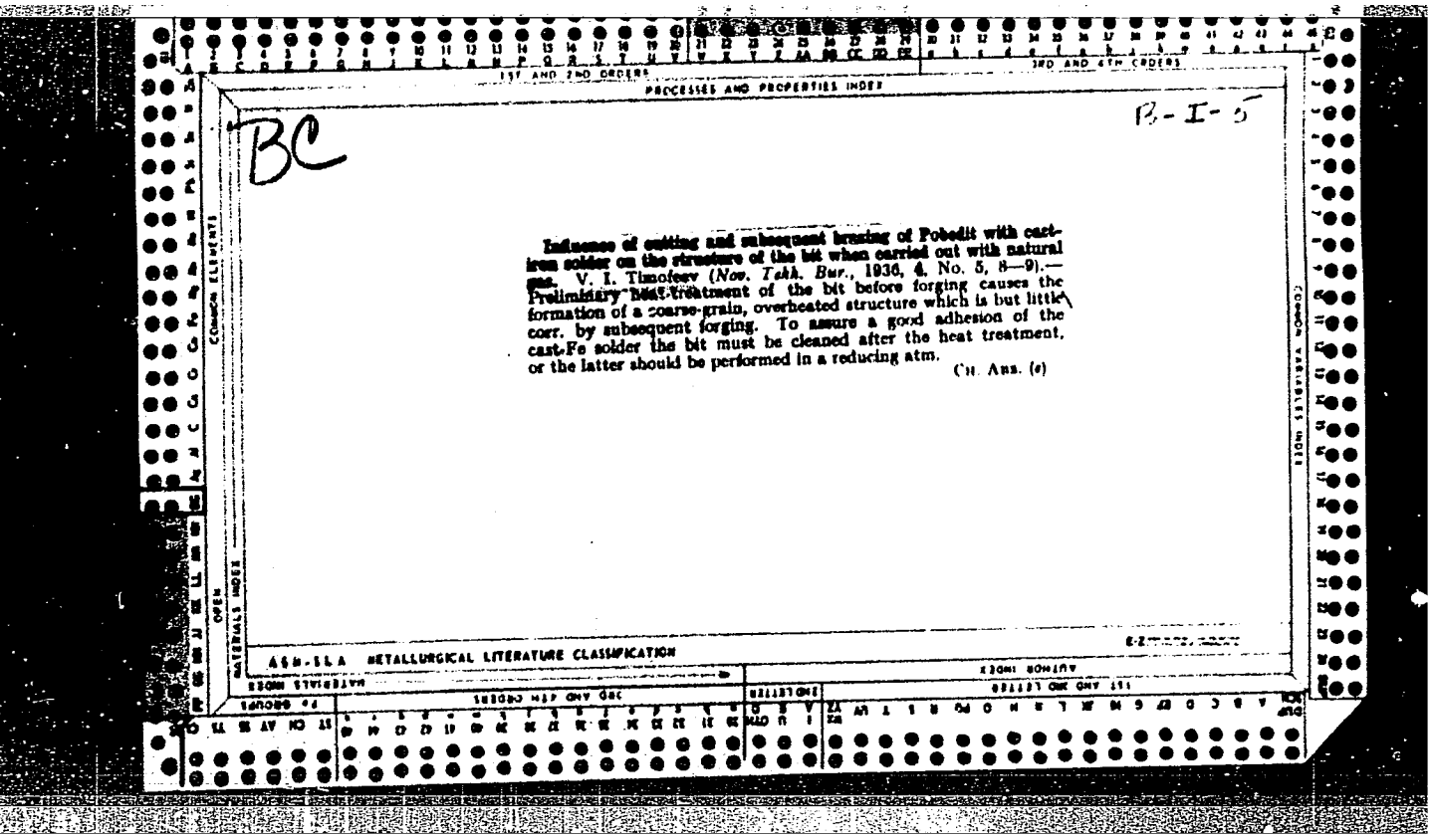


Card 7/7

PROCESSES AND PROPERTIES INDEX

Influence of Cutting and Subsequent Brazing of Pobedit with Cast-Iron Solder on the Structure of the Bit, when Carried Out with Natural Gas. V. I. Timofeev (*Novosti Tekhniki Bureniya*, 1938, 4, (5), 8-9; *C. Abs.*, 1938, **32**, 7088).—[In Russian.] It is stated that a preliminary heat-treatment of the bit before forging causes the formation of a coarse-grain overheated structure which is but little corrected by subsequent forging. The cutting of grooves, for the purpose of reducing the profile of the bit, with an oxygen burner and by means of an electric arc causes only small structural changes. The sand-blasting of the bit prior to brazing ensures good adhesion of the cast-iron solder to the metal of the bit. The brazing process causes the structure to become non-homogeneous, while a proper preliminary heat-treatment may improve the structure. Brazing with a preliminary heat-treatment is recommended, although to ensure good adhesion of the cast-iron solder the bit must be cleaned after heat-treatment or the latter should be carried out in a reducing atmosphere.—S. G.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

BC

B-I-5

Influence of cutting and subsequent brazing of Pobedit with cast-iron solder on the structure of the bit when carried out with natural gas. V. I. Timofeev (*Nov. Tekh. Bur.*, 1936, 4, No. 5, 8—9).—Preliminary heat-treatment of the bit before forging causes the formation of a coarse-grain, overheated structure which is but little corr. by subsequent forging. To assure a good adhesion of the cast-Fe solder the bit must be cleaned after the heat treatment, or the latter should be performed in a reducing atm.

(H. Ans. (e)

A58-S1A METALLURGICAL LITERATURE CLASSIFICATION

TIMOFEYEV, V. I., inzhener.

Transmitting height marks through vertical shafts. Trudy VNIMI no.26:103-118 '52. (MLRA 8:3)
(Mine surveying)

KERIMZADE, Abutalyb Samedovich; KULIYEV, Israfil Piri ogly; TIMOFEYEV, Vladimir Ivanovich; AGALAROV, F.T., red.; GONCHAROV, I.A., vedushchiy red.

[Rapid welding of metal structures at off-shore installations] Opyt skorostnoi svarki metallokonstruktsii morskikh neftepromyslovykh sooruzhenii. Baku, Aznefteizdat, 1954. 141 p. (MIRA 11:5)
(Welding)
(Petroleum industry--Equipment and supplies)

TIMOFEYEV, V. G., (Grad Stud)

Dissertation: "An Investigation of Some Technological Conditions for Obtaining High-Strength Cast Iron With Spheroidal Graphite." Cand Tech Sci, Central Sci Res Inst of Technology and Machine Building (TsNIITMash), 5 Jul 54. (Vechernyaya Moskva, Moscow, 25 Jun 54)

SO: SUM 318, 23 Dec 1954

SHANINA, T.M.; TIMOFEYEV, V.I.; NEGREYEV, V.F.; KIL'CHEVSKAYA, T.Ye.; GADZHIYEVA, K.G.

Corrosion of welded joints in petroleum industry's offshore structures. Trudy Gipromornefti no.1:57-69 '54. (MLRA 9:12)
(Structural frames--Welding)
(Corrosion and anticorrosives)

V. I. TIMOFEYEV

615.917
.K4

Opyt Skorostnoy Svarki Metallokonstruktsiy Morskikh Neftepromyslovykh Sooruzheniy (Test of High-speed Welding of Metal Construction of Marine Oil Industry Installations, by) ABUTALYB SAMEDOVICH KERIMZADE, I. P. KUL'YEV, I V. I. Timofeyev. Baku, Aznefteizdat, 1954. (142) P. Illus., Diagrs., Tables.
Bibliography: P. 140-(142)

TIMOFEYEV, V. I.

AUTHORS: Lilich, L. S., and Timofeyev, V. I. 54-6-15/20

TITLE: The Vapour Pressure in Ternary Systems: $MeCl_2$-HCl + H_2O. System: $BaCl_2$-HCl-H_2O (Davleniye para v troynykh sistemakh $MeCl_2$-HCl+H_2O, Sistema $BaCl_2$-HCl-H_2O).

PERIODICAL: Vestnik Leningradskogo Universiteta Seriya Fiziki i Khimii, 1957, Vol. 22, Nr 4, pp. 127-130 (USSR).

ABSTRACT: The measurements of the vapour pressure of the above cited system has been carried out at various temperatures. At the whole concentration interval and at all recorded temperatures no HCl has been traced in the gas phase. The activity of the water does practically not depend on the temperature. This shows, that the enthalpy of the evaporation of water from solutions is equal to the enthalpy of the evaporation of pure water. The reason for this lies probably in the low concentration of the $BaCl_2$ and of the HCl.
There are 5 figures, 2 tables, and 12 references, 5 of which are Slavic.

SUBMITTED: May 25, 1957.

AVAILABLE: Library of Congress.

Card 1/1

TIMOFEYEV, V.I.

LILICH, L.S.; TIMOFEYEV, V.I.

Vapor pressure in ternary solutions: $MeCl_2$ - HCl - H_2O. Vest.Len.un. 11 no.10:68-74 '56. (MLRA 9:9)
(Chlorides) (Vapor pressure)

Timofeyev V.I.

USSR/Thermodynamics - Thermochemistry. Equilibria. B-8
Physical-Chemical Analysis. Phase Transitions.

Abs Jour : Referat Zhur - Khimiya, No 6, 1957, 18472

Author : L.S. Lilich, V.I. Timofeyev.
Inst : Leningrad University.
Title : Steam Pressure in Ternary Solutions. $MeCl_2$ - HCl - H_2O.

Orig Pub : Vestn. Leningr. un-ta, 1956, No 10, 68-74

Abstract : The steam pressure in systems $ZnCl_2$ - HCl - H_2O (I) and $CuCl_2$ - Cl - H_2O (II) at 25° was measured by the gas current method. The interpretation of the experimental data is done basing on the examination of changes of phases effects of the components according to isoterms - isobars of water (see RZhKhim, 1955, 39726). Judging by the shape of isoterms - isobars, the authors conclude that the processes of component interaction in the system I are of a different character from that in the system II.

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Timofeyev, V.I.

SUBJECT: USSR/Welding 135-3-8/17

AUTHORS: Vladimirova, G.T., Engineer, Kornev, T.N., Candidate of Technical Sciences, and Timofeyev, V.I., Engineer.

TITLE: Drill Pipe Couplings Automatically Resurfaced under Flux and Welded to the Pipes (Avtomaticheskaya naplavka pod flyusom buril'nykh zamkov i privarka ikh k trubam).

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, #3, pp 17-20. (USSR)

ABSTRACT: Up to now, repair and surfacing work on drill pipes and pipe couplings in oil fields is done by hand welding, and the necessity has arisen to mechanize this work. The first, experimental, welding machine is now completed and the new technology developed. The machine is described in detail with a photograph and an electric circuit diagram, the latter was suggested by engineer K.I. Drok). The machine accommodates couplings of 108, 146, 178, and 203 mm diameter and also serves for welding the couplings to the pipes. The flux-holding device used with this machine (for which V.I. Timofeyev has been granted an author's certificate in 1950) eliminates spilling of flux (the design is shown by drawing, Figure 4).

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135-3-8/17

TITLE: Drill Pipe Couplings Automatically Resurfaced under Flux and Welded to the Pipes (Avtomaticheskaya naplavka pod flyusom buril'nykh zamkov i privarka ikh k trubam).

The experimental surfacing done with common low-carbon welding wire resulted in insufficient hardness, but using welding wire alloyed with chrome and manganese (for instance "13Г2Х") provided greater hardness. The technology of experimental surfacing is given in full detail. It eliminates the danger of welding cracks, allows the use of generators which are employed for manual welding, improves the quality of coating. The same technology is also applicable for preliminary welding of smooth couplings with supporting rings to pipes at the working site when drive pipe strings are being lowered (instead of technology of such preliminary welding as suggested by Electric Welding Institute im. E.O. Paton, 6).
The Article contains 3 drawings, 5 photographs, 1 electric circuit diagram, 1 table and 7 references (6 of which are Russian).

ASSOCIATION: "АзИНМАШ" (AzINMASh)
PRESENTED BY:
SUBMITTED:
AVAILABLE: At the Library of Congress.
Card 2/2

TIMOFEYEV, V. I.

LILICH, L.S.; TIMOFEYEV, V.I.

Vapor pressure in ternary systems HCl - H_2O. The system $BaCl_2$ - HCl - H_2O [with summary in English]. Vest. LGU 12 no.22:127-130 '57. (MIRA 11:2)

(Barium chloride) (Hydrochloric acid) (Vapor pressure)

ISKENDERZADE, A.M.; KERIMZADE, A.S.; MAYDEL'MAN, N.M.; TIMOFEYEV, V.L.; ESIBYAN, E.M.

Automatic pipe welding under flux in the construction of foundations for offshore drilling stations. Azerb. neft. khoz. 36 no.12:39-40 D '57. (MIRA 11:3)

(Pipe--Welding)
(Oil well drilling, Submarine--Equipment and supplies)

TIMOFEYEV, V. L.

AUTHOR: Gromyko, L.G. (Engineer) SOV/110-58-9-19/20

TITLE: An All-Union Conference on Electric Welding Equipment (Vsesoyuznoye soveshchaniye po elektrosvarochnomu oborudovaniyu)

PERIODICAL: Vestnik Elektropromyshlennosti,1958,Nr 9,pp 77-79(USSR)

ABSTRACT: An All-Union Conference on electric welding equipment, held from the 3rd to the 5th February 1958 in Leningrad, was called by the Leningrad Council of National Economy and the All-Union Scientific Research Institute of Electric Welding Equipment at the suggestion of the corresponding division of GOSPLAN, USSR. The conference was attended by about 300 representatives of research institutes, factories, councils of national economy, GOSPLANS USSR and RSFSR, and specialist welders. Forty reports and communications were read. Cand.Tech.Sci. N.Ya. Kochanovskiy, Scientific Assistant Director of the All-Union Scientific Research Institute of Electric Welding Equipment, read the main report 'The Development of the production of electric welding equipment in the USSR for 1959-65'. Cand.Tech.Sci. P.I. Sevbo, of the Institute of Electric Welding imeni Ye.O. Paton,

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described the work of the Institute on arc, electro-slag and contact welding. A communication about the future output of welding equipment from the "Elektrik" Works was given by Engineer L.V. Globov. The work of the Welding Equipment Research Institute on contact-welding equipment was described by Cand.Tech.Sci. L.V. Zaychik. Cand.Tech. Sci. S.M. Katler, also of the Institute, gave an account of its work on cold welding and friction welding. A.L. Orlov, described the design and modernisation of welding equipment manufactured by the Iskra works. Engineer S.N. Davydov gave a communication entitled 'The operation of electric welding equipment at the Uralmash works and requirements in respect of the future development and manufacture of such equipment in the USSR'. Dr.Tech.Sci. A.S. Gel'man, of the Central Scientific Research Institute of Engineering Technology, stipulated the requirements of welding equipment for heavy engineering. Cand.Tech.Sci. A.T. Galaktionov, of the Ural Polytechnical Institute, described the production of some types of contact-welding machines. Engineer V.I. Timofeyev,

An All-Union Conference on Electric Welding Equipment

of the AZINMASH, reviewed the use of welding in the oil industry. All the above reports are briefly recounted; another 15 or so each receive a few lines. The conference pointed out the need for quadrupling the output of welding equipment by 1965, with contact-welding equipment comprising at least half the output. Special attention should be paid to mechanising welding and to developing high-output welding equipment for various branches of the economy.

There are no figures.

1. Electric welding--Equipment

Card 3/3

SOV/137-58-11-22843

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 145 (USSR)

AUTHORS: Kerim-Zade, A. S., Timofeyev, V. I.

TITLE: The Selection of Welded Joints and Welding Methods for Joining of Gas Pipes Operating Under a Pressure of 250 at (Vybor tipa soyedineniya i sposoba svarki stykov trub gazoprovoda dlya davleniya 250 at)

PERIODICAL: Novosti neft. tekhn. Neftepromysl. delo, 1958, Nr 2, pp 33-36

ABSTRACT: Torch welding or threaded connections (for pipes of 14, 20, and 24 mm in diameter) as well as manual arc welding (for pipes of 70, 102, and 108 mm in diameter) are recommended for joining gas pipes operating under a pressure of 250 at. The pipe sections of a gas line at the "Karadagneft'" construction site were assembled in accordance with these recommendations; the pipe line is being operated successfully at the present time.

B. K.

Card 1/1

Timofeyev, V. I.

24(8) PHASE I BOOK EXPLOITATION SOV/2609

Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk

Termodinamika i stroyeniye rastvorov; trudy soveshchaniya... (Thermodynamics and Structure of Solutions; Transactions of the Conference Held January 27-30, 1958) Moscow, Izd-vo AN SSSR, 1959. 295 p. 3,000 copies printed.

Ed.: M. I. Shakhparonov, Doctor of Chemical Sciences; Ed. of Publishing House: N. G. Yegorov; Tech. Ed.: T. V. Polyakova.

PURPOSE: This book is intended for physicists, chemists, and chemical engineers.

COVERAGE: This collection of papers was originally presented at the Conference on Thermodynamics and Structure of Solutions sponsored by the Section of Chemical Sciences of the Academy of Sciences, USSR, and the Department of Chemistry of Moscow State University, and held in Moscow on January 27-30, 1958. Officers of the conference are listed in the Foreword. A list of other reports also read at the conference, but not included in this book, are given. Among the problems treated in this work are: electrolytic solutions, ultrasonic measurement, dielectric and thermodynamic properties of various mixtures, spectroscopic analysis, etc. References accompany individual articles.

25

KULIYEV, I.P.; TIMOFEYEV, V.L.; KERIM-ZADE, A.S.

Joining pipes in laying and repairing subaqueous pipelines.
Azerb. neft. khoz. 38 no.6:46-47 Je '59. (MIRA 12:10)
(Pipe fitting)

TIMOFEYEV, V.I., kand. med. nauk

Lambliasis. Zdrav. Bel. 9 no.7:44-45 Jl'63 (MIRA 17:4)

TIMOFEYEV, V.I.; GUSEV, G.S.

Distribution of diamond placer deposits in the northeastern part of the Siberian Platform. Trudy IAFAN AN SSSR Ser. geol. no.9:149-154 '63. (MIRA 16:12)

FARZALIYEV, Farzali Magomed; TIMOFEYEV, Vladimir Ivanovich

[Electric welder's handbook] Elektrik gainagchy synyn sorag kitabchasy. Baky, Azerbaichan Dovlet neshriiiaty, 1964. 183 p. [In Azerbaijani] (MIRA 17:5)

SUTOVSKIY, P.M., inzh.; GANIYEV, S.M., inzh.; TIMOFEYEV, V.I., inzh.

Machine for the friction welding of connection ends to drill pipes. Svar.proizv. no.2:15-17 F '64. (MIRA 18:1)

1. Azerbaydzhanskiy nauchno-issledovatel'skiy institut neftyanogo mashinostroyeniya.

UTIN, I.A.; BASKIN, B.M.; TIMOFEYEV, V.I.

Reconditioning by electric welding of large-size units and parts of metallurgical equipment. Avtom. svar. 17 no.12: 61-64 D '64 (MIRA 18:2)

1. Azerbaydzhanskiy truboprokatnyy zavod im. V.I. Lenina (for Utin, Baskin). 2. Azerbaydzhanskiy nauchno-issledovatel'skiy institut neftyanogo mashinostroyeniya (for Timofeyev).

TIMOFEYEV, V.I., inzh.

Republican conference of Azerbaijan welders. Svar. proizv. no.3:41-42 Mr '64. (MIRA 18:9)

TIMOFEYEV, V.I.

Economic efficiency of using the MTZ-52 tractors. Biul.-tekh.-ekon. inform.Gos.nauch.-issl.inst.nauch.i tekh.inform. 18 no.9:44-45 S '65. (MIRA 18:10)

TIMOFEYEV, V.I.; YALOVENKO, F.T.

Economic efficiency of the use of the T-4 tractor. Biul.tekh.-ekon. inform.Gos.nauch.-issl.inst.nauch.i tekh.inform. 18 no.4:48-50 Ap '65. (MIRA 18:6)

SOV/54-58-3-12/13

AUTHORS: Shchukarev, S. A., Lilich, L. S., Timofeyev, V. I.

TITLE: The Entropy of the Solution of Some Salts (Entropiya rastvoreniya nekotorykh soley)

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1958, Nr 3, pp 105-111 (USSR)

ABSTRACT: The method chosen in the present paper has already been applied in the case of the mixture of two liquids (Refs 4-6). The new feature is its application to the solution of a solid in a liquid solvent. The authors expressed the thermodynamical functions as solution functions (n) and not as functions of the molar fraction. This made possible a better approximation to the ideal state in aqueous salt solutions. The solution entropy was computed for a number of salts (mainly for the halogens of the elements of the I. and II. group of the periodic system) and for a certain range of concentrations. The computed data are given in figures 1 and 2 and in tables 1 and 2. The absolute entropies of some solutions were computed as well (Table 3). From the curves conclusions concerning the thermodynamics of the

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solution and to a certain degree also of the solution itself can be deduced. According to the relative position of the three basic thermodynamical functions at least 3 cases are strikingly evident: a) ΔZ and ΔH are in the exothermic and ΔS in the endothermic range; b) ΔZ is in the exothermic, ΔH and ΔS are in the endothermic range; c) ΔZ, ΔS, and ΔH are all exothermic. It turned out that in some cases the enthalpy - the interaction between the solvent and the substance to be dissolved - plays a considerable role. In other cases the increase in entropy of the solvent and of the dissolved substance during their interaction is decisive. Finally cases exist in which both factors act in one and the same direction. The suggested computation method classifies the solutions according to Mendeleyev's conceptions concerning solutions as belonging into one line with common chemical compounds. There are 7 figures, 2 tables, and 7 references, 4 of which are Soviet.

SUBMITTED: January 9, 1958

SOV/54-58-3-18/19

AUTHORS: Shchukarev, S. A., Lilich, L. S., Timofeyev, V. I.

TITLE: Modification of the Isobaric Potential During the Solution of Some Halides in Water (Izmeneniye izobarnogo potentsiala pri rastvorenii nekotorykh galogenidov v vode)

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1958, Nr 3, pp 149-155 (USSR)

ABSTRACT: In the present paper the authors computed the change of the isobaric Gibbs potential ΔZ of a number of substances when they are mixed with water. The computed quantities are of practical importance as they characterize the real and practically important formation processes of solutions and their components. In the computation of the change of ΔZ the equation $\Delta Z = \Delta \mu_1 + n \Delta \mu_2$ was used as starting point. $\Delta \mu_1$ denotes the change of the chemical potential of the dissolved substance at the transition from the pure salt or the saturated solution to the solution of the respective concentration; n denotes the number of moles of the solvent per 1 mol of the dissolved substance; $\Delta \mu_2$ denotes the change

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Modification of the Isobaric Potential During the Solution of Some Halides in Water

of the chemical potential of the solvent during the transition from the pure solvent to the solution in question. The change of ΔZ (at $T = 25^{\circ}$) during the formation of some salt solutions (halides of the elements of the I. and II. group of the periodic system) in the initial state - salt plus water - was computed. (Tables 1, 2). The integral quantities determined are represented as solution functions of the solutions n . A contrast between the functions $\Delta Z = f(n)$ permits to draw conclusions on their resemblance in form and the difference in their relative position. The latter depends on the chemical individuality of the interacting systems. Some advantages of the employed reading scale as compared to the usual scale for electrolytic solutions are shown. There are 2 figures, 1 table, and 12 references, 7 of which are Soviet.

SUBMITTED: January 9, 1958

SHCHUKAREV, S.A.; LILICH, L.S.; TIMOFEYEV, V.I.

Entropy of a solution of various salts [with summary in English]. Vest. LGU 13 no.16:105-111 '58. (MIRA 11:11)
(Solution (Chemistry)) (Entropy)

SHCHUKAREV, S.A.; LILICH, L.S.; TIMOFEYEV, V.I.

Changes in the isobaric potential during the dissolving of some halides in water [with summary in English]. Vest. LGU 13 no.16: 149-155 '58. (MIRA 11:11)
(Halides) (Solution (Chemistry))

TIMOFEYEV, V.I.

Vapor pressure in ternary $MeCl_2$ - HCl - H_2O solutions. System $CdCl_2$-HCl - H_2O. Vest.LGU 14 no.10:100-105 '59. (MIRA 12:6)
(Vapor pressure) (Hydrochloric acid)

TIMOFEYEV, V. I.

TIMOFYEYEV, V. I., Cand Chem Sci -- (diss) "An Investigation of the Chemical Potentials of the Complements in Triple Hydro-Saline Solutions." Leningrad, 1960, 12 pp, (Leningrad Order of Lenin State Univ im A. A. Zhdanov) 200 copies, no price given (KL, 21-60, 119)

MAKARENYA, A.A.; TIMOFEYEV, V.I.

Works of E.V. Biron on physical chemistry. Trudy Inst.ist.est. i tekh. 35:108-125 '61. (MIRA 14:9)
(Chemistry, Physical and theoretical)

TIMOFEYEV, V.I.

Study of chemical potentials of components of ternary water - salt solutions. Part 1: Method for calculating chemical potentials. $BaCl_2$ - HCl - H_2O system at 25° C. Vest. LGU 17 no.4:115-121 '62. (MIRA 15:3)

(Systems(Chemistry))(Electromotive force)(Salts)

TIMOFEYEV, V.I.

Chemical potentials of components of ternary water - salt solutions. Part 2: Refined method of calculating chemical potentials. $SrCl_2$ - HCl - H_2O system. Vest.LGU 17 no.10:135-139 '62. (MIRA 15:5)

(Systems (Chemistry)) (Electromotive force)

TIMOFEYEV, V.I.

Excretion of pellagra-preventive vitamin in internal diseases.
Terap. arkh. 29 no.5:47-57 My '57. (MIRA 11:4)

1. Iz fakul'tetskoy terapevticheskoy kliniki (nach.-prof. A.A. Nechayev) i iz kafedry biokhimii (nach.-prof. V.M.Vasyutochkin) Voyenno-morskoy meditsinskoy akademii.
(NICOTINIC ACID, in urine,
in var. internal dis. (Rus)

2260. EXCRETION OF ANTIPELLAGRA VITAMIN IN PATIENTS WITH DISEASES OF INTERNAL ORGANS (Russian text) - Timofeev V. I. - TERAP. ARKH. 1957, 29/5 (47-57) Graphs 9 Tables 3

A study of the saturation of the organism with nicotinic acid in 510 cases in the therapeutic clinic was carried out, entailing 1405 analyses. The material consisted of patients with various visceral diseases, mostly of the cardiovascular, gastrointestinal and respiratory systems. In the majority of cases a considerable deficiency of nicotinic acid was registered. Deficiency of nicotinic acid is an index of endogenic PP-hypovitaminosis, occurring as a result of functional disturbance of different organs, and metabolic disorder. The least saturation of the organism with nicotinic acid was registered in patients in the end stages, accompanied by cachexia. Pronounced endogenic PP-hypovitaminosis occurs in cases with functional disturbance of the liver due to acute and chronic hepatitis, and also in static liver congestion, in blood diseases and in endocrine disorders (diabetes). The decrease of PP-vitamin saturation in patients with pneumonia, after treatment with sulphanilamide preparations and penicillin, is explained by the antagonistic effect of the latter upon the investigated vitamin. Biochemical investigations and clinical observations of the patients showed a close connection between the course of the disease and saturation of the organism with nicotinic acid. Investigation of the excretion of nicotinic acid is one of the reliable early indices of PP-vitamin deficiency. The detection of PP-vitamin deficiency in cases with internal diseases shows the necessity of a wide employment of the vit. B complex (particularly nicotinic acid) in the general system of medical measures, and especially in treatment with sulphonamide preparations, and in pronounced disturbance of absorption. References 18.

Burakovskii - Moscow

TIMOFEYEV, V.I., podpolkovnik meditsinskoy sluzhby, kand.med.nauk

Status of the acid-forming function of the stomach in healthy subjects. Voen.-med. zhur. no.11:26-29 N '61. (MIRA 15:6)
(STOMACH--SECRETIONS)

TIMOFEYEV, V.I., kand. med. nauk

Pulmonary sarcoidosis (Besnier-Boeck-Schaumann's disease) with a lesion of the heart. Sov. med. 28 no.5:149-150 My '65. (MIRA 18:5)

1. Gospital'naya terapevticheskaya klinika Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova (nachal'nik - prof. N.S. Molchanov), Leningrad.

PHASE I BOOK EXPLOITATION 819

Timofeyev, Valentin Leont'yevich and Tkachenko, Mikhail Kondrat'yevich

Proizvodstvo martenovskoy stali; uchebnik dlya shkol i kursov masterov (The Production of Open-hearth Steel; a Textbook for Schools and Courses for Foremen) Khar'kov, Metallurgizdat, 1957. 13,000 copies printed.

Resp. Ed.: Zaykov, S.T.; Ed. of Publishing House: Liberman, S.S.; Tech. Ed.: Andreyev, S.P.

PURPOSE: The book is a textbook for schools and for a special two and one half year training course for foremen employed in foundries using the open-hearth process in the production of steel. It may also be of use to engineering and technical personnel, and steel workers of open-hearth plants.

COVERAGE: In a systematic way the authors develop the underlying principles of the theory and practice of the basic and acid open-hearth processes of producing steel. They also discuss methods of pouring steel, the properties of castings, the construction and maintenance of open-hearth furnaces, furnace heating systems and their automatic control, general control of the steel-making process, and cost of production and ways of reducing it. There are 28 references, 25 of which are Soviet, 2 German and 1 English.

Card 1/6

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

Card 6/6

GO/fal
12/8/58

LAPITSKIY, V.I., doktor tekhn.nauk, prof.; STUPAR', N.I., dotsent;
STUPEL', S.I., inzh.; TARAPAY, M.A., inzh.; TIMOFEYEV, V.L., inzh.;
YAKOVLEV, Yu.N., inzh.

Certain problems in the preparation of steel ingots for wheels.
Izv. vys. ucheb. zav.; chern.met. no.5:21-28 My '58. (MIRA 11:7)

1.Dnepropetrovskiy metallurgicheskiy institut i zavod im. K.
Libknekhta.
(Steel ingots)

TIMOFEYEV, Valentin Leont'yevich; TKACHENKO, Mikhail Kondrat'yevich; ZAYKOV, S.I., otvetstvennyy red.; LIBERMAN, S.S., red.izd-va; ANDREYEV, S.P., tekhn.red.

[The production of open-hearth steel; a textbook for schools and courses for foremen] Proizvodstvo martenovskoi stali; uchebnik dlia shkol i kursov masterov. Khar'kov, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 211 p. (MIRA 11:2)
(Open-hearth process)

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

The influence of heat-treatment on the condition and properties of hard alloys. A. P. Buslakov and N. I. Umofeev.—*Azerbaidzhanskoe Neftyanoe Khoz.* 16, No. 7, 35-42(1936); *Chem. Zentr.* 1936, II, 3721-2. Expts. are reported on the effect of the heat-treatment upon hard alloys used for fastening petroleum drills. Upon heating in the usual poorly oxidizing medium, Pobedite and other alloys in coarse chunks were strongly oxidized. Powd. alloys, on the other hand, underwent no oxidation upon heating up to 870° in an atm. of furnace gas. The surface oxidation of the alloys, however, was without influence on the hardness after the oxide layer was removed. The cementation had no effect upon the condition and properties of the objects welded with the alloys. In order to protect the pieces of hard alloy from oxidation during heating for welding, they must be covered with a 1.5-2-mm. layer of soft Fe. Such a layer is unnecessary when the furnace atm. is a reducing one. Tempering in oil is to be preferred. M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ACC NR: AT6020472 (A) SOURCE CODE: UR/0000/65/000/000/0059/0068

AUTHOR: Kamenetskiy, F. M. (Moscow); Timofeyev, V. M. (Moscow)

ORG: none

TITLE: The effect of the shape of the excitation pulse on the results observed in prospecting for highly conductive ores by the field stabilization method

SOURCE: AN UkrSSR. Teoriya i elementy sistem otbora geofizicheskoy informatsii (Theory and elements of systems for selecting geophysical information). Kiev, Naukova dumka, 1965, 59-68

TOPIC TAGS: prospecting, pulse shape, pulse duration modulation

ABSTRACT: The authors describe the effect of signal duration and shape upon the resolution quality of this method. Such seemingly instantaneous changes of the field as are caused, e. g., by switching the current off and on are actually long enough to permit the development of a complex series of events. The authors conclude that to eliminate the transient process due to switching the current off, the signal should be much shorter in duration--not over 0.4-0.6 msec. In addition, the contact transmitting the pulse should be rectangular and it should fit a #2 size opening. Orig. art. has: 34 formulas.

SUB CODE: 08/ SUBM DATE: 10Nov65/ ORIG REF: 001/ OTH REF: 002

Card 1/1

AGAFONOV, Boris Sevast'yanovich; TIMOFEYEV, V.M., red.; LARIONOV, G.Ye., tekhn. red.

[Calculation of the operating conditions of transmitting tubes] Raschet ekspluatatsionnykh rezhimov generatornykh lamp. Moskva, Gosenergoizdat, 1962. 223 p. (MIRA 16:3)
(Electron tubes)
(Radio—Transmitters and transmission)

SOV/13[illegible]-12-3-12/13

18(7),28(1)
AUTHOR: Timofeyev, V.M., and Surikov, L.S. (Moscow)

TITLE: Obtaining a Hard Volt-Ampere Characteristic of the Feeding Source for the Welding Arc by Using an Automatic Voltage Regulator (Polucheniye zhestkikh vneshnikh vol't-ampernykh kharakteristik istochnikov pitaniya svarochnoy dugi putem ispol'zovaniya avtomaticheskikh regulyatorov napryazheniya)

PERIODICAL: Avtomaticheskaya svarka, 1959, Vol 12, Nr 3, pp 93-94 (USSR)

ABSTRACT: The usual generators for electro-welding mostly have a poor volt-ampere characteristic which diminishes the quality of the welding seam. The most favorable installation of a usual carbon-voltage regulator R-25AM to the generator AZD-7,5/30 is described, which can be observed easily during the welding process. A voltage continuity of ±0.5 volt can be obtained by this regulator. There is 1 photograph.

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SOV/125-12-8-13/13

Obtaining a Hard Volt-Ampere Characteristic of the Feeding Source for the Welding Arc by Using an Automatic Voltage Regulator

SUBMITTED: July 7, 1958

Card 2/2

USCOMM-DC-60,729

TIMOFEYEV, V.M.

Use of a GSR-9000 generator as power supply source for arc welding. (MIRA 11:10)
Avtom. svar. 11 no.8:93-95 Ag '58.
(Electric welding--Equipment and supplies)
(Electric generators)

SOV-125-58-8-16/16

AUTHOR: Timofeyev, V.M.

TITLE: Experience in the Use of "GSR-9000" Generators as a Power Source in Arc Welding (Opyt primeneniya generatorov GSR-9000 kak istochnikov pitaniya svarochnoy dugi)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 8, pp 93-95 (USSR)

ABSTRACT: As there is a lack of generators with rigid or rising external characteristics, necessary for welding with fusing electrodes, a converted aircraft generator "GSR-9000", recommended by the author, was brought into practical use to serve as a power source for welding with fusing or unfusing electrodes. This generator is a six-pole d.c. machine of parallel excitation, with three additional poles of the same polarity. A detailed description of the installation is given.
There is 1 diagram and 1 photo.

SUBMITTED: March 1, 1958

1. Welding equipment--Operation

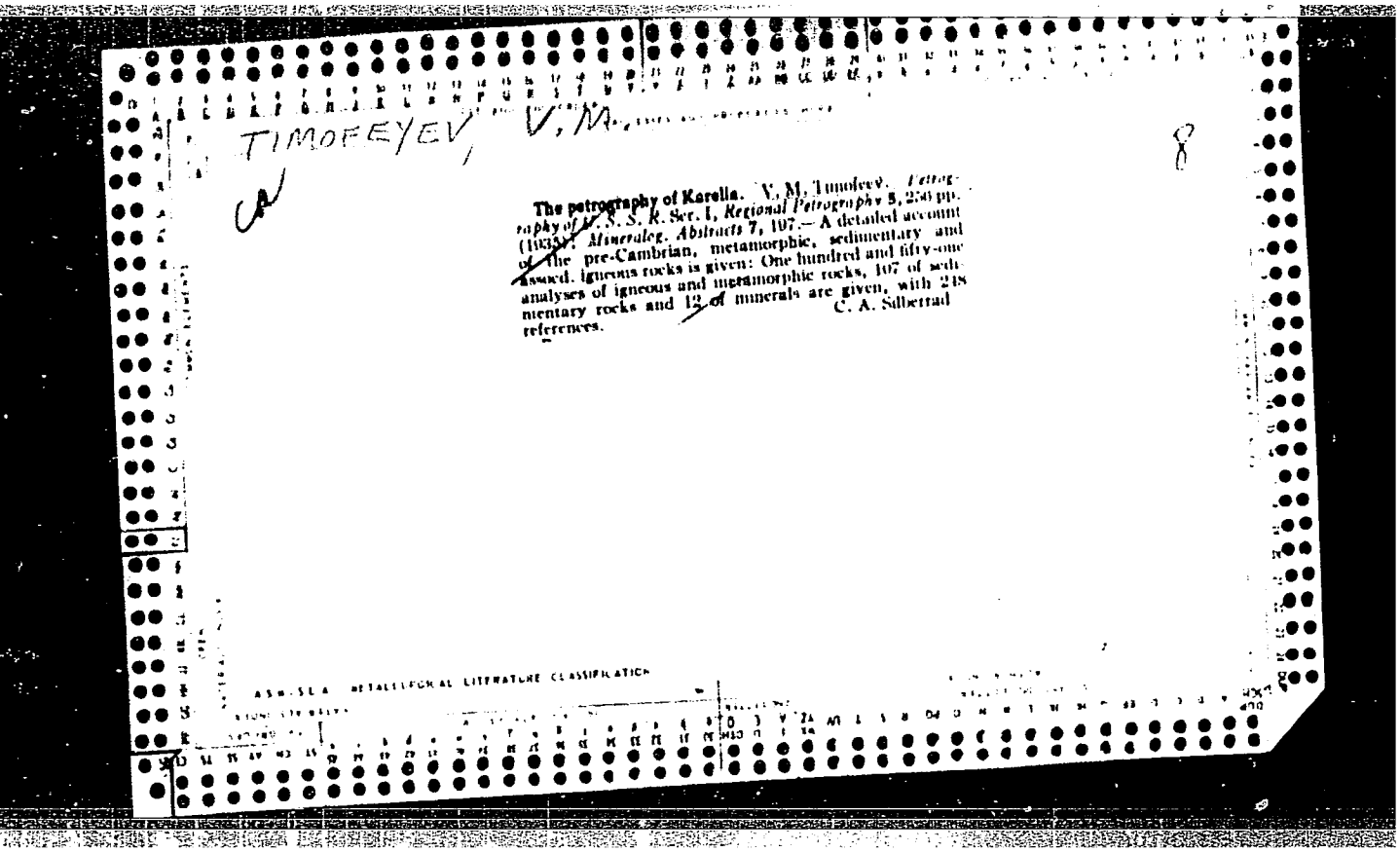
Card 1/1

USCOMM-DC-55302

TIMOFEYEV, V. M.

SAVITSKIY, Yu.I.; TIMOFEYEV, V.M.

Analysis of five-unit codes for telegraph printers. Elektrosviaz' 11 no.7:57-62 Jl 57. (MLRA 10:8)
(Cipher and telegraph codes)



TIMOFEYEV, V. M.

8

The petrography of Karelia. V. M. Timofeev. *Petrography of U. S. S. R.* Sec. I, *Regional Petrography* 5, 250 pp. (1935). *Mineralog. Abstracts* 7, 107.—A detailed account of the pre-Cambrian, metamorphic, sedimentary and assocd. igneous rocks is given: One hundred and fifty-one analyses of igneous and metamorphic rocks, 107 of sedimentary rocks and 12 of minerals are given, with 248 references. C. A. Silberrad

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

TIMOFEYEV, V.M., dotsent, laureat Gosudarstvennoy premii

Half a century of one of the oldest radio stations. Vest.sviazi 25 no.2:29-32 F '65. (MIRA 18:6)

TIMOFEYEV, Vladimir Mikhaylovich; VENGRENYUK, L.I., red.

[Design of radio transmitters] Proektirovanie radiope-redaiushchikh ustroistv. Izd.2., dop. Moskva, Sviaz', 1965. 288 p. (MIRA 18:7)

SUPRUNOV, N.N.; BESPAL'CHIK, L.M.; TIMOFEYEV, V.M.; BEZLYUD'KO, A.I., otv. red.; YEROKHIN, G.M., ved. red.; NESTERENKO, V.I., red.; KUNIN, I.K., red.;

[Jet boring; studies] Termicheskoe burenie; sbornik trudov. Moskva, Nedra, 1965. 182 p. (MIRA 18:12)

1. Krivoy Rog. Institut "Giprorudmash."

ACCESSION NR: AT4038815 S/2778/63/000/011/0106/0113

AUTHOR: Shenderovich, I. M.; Kleban, L. S.; Timofeyev, V. N.

TITLE: The GM-30 tsunami (tidal wave) warning device

SOURCE: Leningrad. Nauchno-issledovatel'skiy institut gidrometeorologicheskogo priborostroyeniya. Trudy*, no. 11, 1963, 106-113

TOPIC TAGS: meteorology, tidal wave, seismic tidal wave, earthquake, tsunami, tsunami detection

ABSTRACT: In previously published papers, a method has been developed for the detection of tsunami waves arising against a background of tidal variations in the level of the sea. This method is based on the fact that the rate of change in level due to tides (ebb and flow) and to tsunami waves is different. In order to determine these rates by means of the currently used sea-level recorder (or floating tsunami recorder), the floating system of the latter converts sea level variations into displacements of a special mechanical carrier arrangement, the speed of which is measured according to the value of the braking force of a piston traveling in a cylinder with a viscous liquid. This method of speed measurement was chosen because these speeds are very small in terms of absolute magnitude and are approximately equal to 0.5 mm/min for tidal variations and 3-5 mm/min for

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ACCESSION NR: AT4038815

tsunami waves. Maximum and minimum rates and periods of tidal- and tsunami-caused sea level changes are discussed in the article and tables are given illustrating the maximum (and minimum) numerical values of tidal speeds at installation sites of sea level recorders and the ratio of level variation rates as caused by ebb and flow and tsunami waves for various ranges of level measurement. A method is also described for furnishing warning signals regarding the approach of tsunami waves to the installation site of tsunami or tidal wave recorders and sea level indicators. The operation of this device is based on measurement of the speed of movement of a carrier which is rigidly connected with the movement of the floating wheel of the sea-level recorder (or floating tsunami recorder) which records the sea level variations. When the level variations are of tidal origin, the carrier movements are slow, whereas with the advent of tsunami waves the movement of this carrier arrangement is accelerated, this fact being determined by means of a special device pictured and described in the text of the article, along with an explanation of its electrical circuitry. In order to achieve uniform speeds in the movement of the tsunami indicator, the floating wheel of the sea level indicator was uniformly rotated by means of an SD-2 synchronous motor (2 rpm), with rubber washers of different diameters placed on the shaft of the motor in order to ensure the necessary speeds of carrier displacement (15-mm washer to simulate "slow tsunami waves" at 2.4 cm/min; 5-mm washer to simulate "rapid tides" at 0.8

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ACCESSION NR: AT4038815

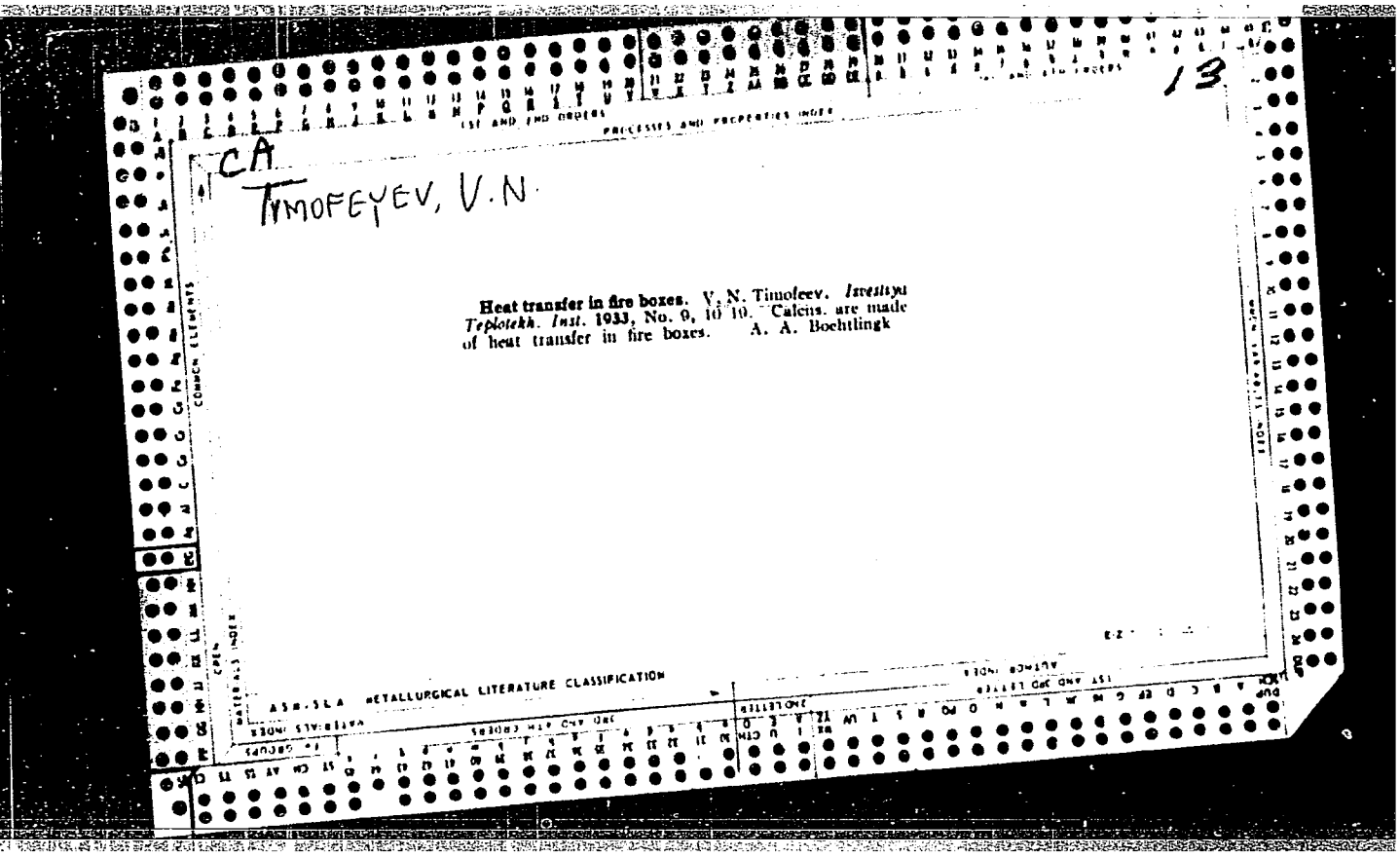
cm/min; 9-mm washer to simulate "Intermediate speeds of level variation" at 1.4 cm/min). The results of laboratory tests using this type of set-up are described in the article. Orig. art. has: 4 figures, 3 formulas and 5 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut gidrometeorologicheskogo priborostroyeniya, Leningrad. (Scientific Research Institute of Hydrometeorological Instrument Building)

SUBMITTED: 00 DATE ACQ: 12Jun64 ENCL: 00

SUB CODE: ES NO REF SOV: 004 OTHER: 000

Card 3/3



CA

TIMOFEYEV, V.N.

Heat transfer in fire boxes. V. N. Timofeev. *Izvestiya Teplotekh. Inst.* 1933, No. 9, 10 10. Calcns. are made of heat transfer in fire boxes. A. A. Bochtlingk

PA 38T30

USSR/Engineering Jun 1946
Thermal Analysis
Steam Thermodynamics

"Rules for Thermal Computation of Steam Generating Units," V. N. Timofeyev, Candidate in Technical Sciences, Boiler Laboratory, 7½ pp

"Izvest VTI" No 6 (134)

This series of articles was started in "Izvest VTI" No 1,2,3,4, 1941. The war put an end to the series as well as the experiments, however, and it was not until the end of 1945 that the experiments were started again. In this issue, Timofeyev discusses the physical constants of gases, the thermal capacity of gases,

38T30

TIMOFEYEV, V. N.

LC

USSR/Engineering (Cont'd) Jun 1946

the thermal conductivity of gases, the viscosity of gases, and the physical constants of water. Chapter VIII of the series discusses the physical constants of gas and water vapors.

38T30

PA 38T31

USSR/Engineering Jul/Aug 1946
Heat - Transmission
Thermal Analysis

"Rules for Thermal Computations of Steam Generating Units," V. N. Timofeyev, Candidate in Technical Sciences, Boiler Laboratory, 10 pp

"Izvest VTI" No 7/8 (135/136)

Article is a continuation of the series which was started in issue No 1, 1941, "Izvest VTI." This installment discusses the coefficient of heat transmission during prolonged washing. In particular, Timofeyev discusses formula used for calculations for conditions of turbulent movement, selection of tempera-

38T31

LC

USSR/Engineering (Contd) Jul/Aug 1946

ture for determining the physical constants, effect of the direction of flow, effect of the length of the tube on the thermal transmission, and thermal transmission in the transfer regions. Chapter IX discusses the coefficient of thermal transmission by convection.

38T31

TIMOFEYEV
TIMOFEYEV, V. N.
LC

Timofeyev, V. N.

AID P - 5595

Subject : USSR/Engineering

Card 1/1 Pub. 107-a - 7/12

Authors : Abramovich, V. R., Eng., and V. N. Timofeyev, Eng.

Title : Arc welding and gas soldering of copper-nickel pipelines.

Periodical : Svar. proizv., 11, 25-28, N 1956

Abstract : The authors describe the tests and results obtained in welding and soldering of the MN-5 and MN-10 copper and nickel alloy pipes of 80x5mm and 55x2.5mm size, and plates of the same alloys 2 to 4mm thick with certain additional materials, electrodes and coatings. Six tables, 3 photos (3 macro- and 2 micro-pictures), 1 graph; 2 Russian references (1949-54), 1 US reference (1954).

Institution : None

Submitted : No date

ACCESSION NR: AP4017076 S/3063/61/017/004/0069/0074

AUTHOR: Timofeyev, V. N. (Candidate of technical sciences, Docent); Vinogradov, V. S. (Engineer)

TITLE: Residual stresses in the surface layer of steel parts after turning

SOURCE: Gorkiy. Politekhnicheskiy institut. Trudy*, v. 17, no. 4. 1961, 69-74

TOPIC TAGS: residual stress, steel surface layer, steel part turning, residual tangential stress, steel part, steel stress

ABSTRACT: The magnitude, sign and character of distribution, through the depth of the surface layer, of the residual tangential stresses which arise in the turning of steel parts with mineral-ceramic and hard-alloy cutting tools were determined. Determination of the residual stresses was accomplished by the method proposed by Academician N. N. Davidenkov (N. N. Davidenkov. Izmereniye ostatochny*kh napryazheniy v trubakh. Zhurnal tekhnicheskoy fiziki, 1931, no. 1). Essentially, the method consists of the sequential removal from the investigated surface of ring samples of metal layers and of the measurement of the diameter changes which occur in this process. On the basis of the experimental data, and through computation, a determination was made of the residual stresses which occurred in the removed layer. The device used for electric polishing and for

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ACCESSION NR: AP4017076

tensiometric (strain gauge) readings of the samples was described. The outfit consisted of an electrolytic bath for the removal of thin layers from the surface of the samples, a step-down transformer with a rectifier unit for current constancy, a mirror-type galvanometer for recording sample deformations during the polishing process and a panel for controlling the tensiometric resistance bridge. The preparation of the ring samples (of steel No. 45 with an internal diameter of 50 mm and height of 15 mm) and the test methodology were described. On the basis of the results, the authors found that: 1) when turning steel rings (with the cutting modes adopted in the experiment by means of hard-alloy and ceramic tools), residual tensile stresses develop in the surface layer; 2) the value of the stresses on the surface reaches 26-62 kg/mm^2 after turning with a hard-alloy cutter and 36-51 kg/mm^2 with a ceramic cutter; 3) the outline character of the residual stresses is uniform in almost all cases. High stresses on the surface rapidly decrease to a depth of 0.02-0.03 mm from the surface, after which there is a further gradual reduction until the sign changes; 4) the thickness of the stress layer until the sign changes is 0.055-0.08 mm; 5) the character of the function of stress as it relates to the depth of cutting differs for ceramic and hard-alloy cutting tools; and 6) under identical cutting conditions, residual stress in the surface layer after machining with a ceramic cutting tool is 15-30% lower than after cutting with a hard-alloy tool (an explanation for this last point was advanced). Orig. art. has: 11 figures.

Card 2/3

ACCESSION NR: AP4017076

ASSOCIATION: Politekhnicheskiy institut, Gorkiy (Gorkiy Polytechnical Institute)

SUBMITTED: 00 DATE ACQ: 20Mar64 ENCL: 00

SUB CODE: MM NO REF SOV: 004 OTHER: 000

Card 3/3

TIMOFEYEV, V. N.

Strains and Stresses

Residual stresses of the first type originating in the surface layer of steel during turning. Vest. mash. 31, No. 12, 1951.

9. Monthly List of Russian Accessions, Library of Congress, September, 1953 Uncl.

PAMASENKO, M.D., TIMOFEYEV, V.N., FILIMONOV, A.I.

Steam Boilers

Using experimental data for the study of moisture removal. Izv. AN SSSR Otd.tekh.nauk., no. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, NOVEMBER 1952 ~~1953~~, Uncl.

231T40

TIMOFEYEV, V. N.

USSR/Engineering - Thermodynamics, Boilers

May 52

"Heat Exchange in the Groups of Finned Tubes of a Cast Iron Economizer," V. N. Timofeyev, Cand Tech Sci, E. S. Karasina, Engr, Boiler Lab, VTI

"Iz v-s Teplotekh Inst" No 5, pp 20-23

Describes expts to establish dependence of heat loss and aerodynamic resistance in bunches of tubes on various parameters, such as: arrangement of tubes in bunch, diam, spacing, shape of fins, their height, spacing and thickness. Discusses and presents results in graphical form.

231T40

Timofeyev, V. N.

USSR/Physics - Stresses of polishing FD-905

Card 1/1 Pub 153-14/26

Author : Timofeyev, V. N.

Title : Problem of stresses in the surface layer of steel during polishing

Periodical : Zhur. tekh. fiz. 24, 1273-1281, Jul 1954

Abstract : The transversal polishing of parts introduces stretcher strains at the surface. The experimentally found tangential and axial residual stresses are not essential. The main stress is turned around the axis of symmetry by a certain angle. It may be computed from experimental data. Three references.

Institution : --

Submitted : October 25, 1953

TIMOFEYEV, V.N.

KAVADEROV, Aleksandr Vladimirovich , doktor tekhnicheskikh nauk; TIMOFEYEV, V.N., redaktor; KEL'NIK, V.P., redaktor izdatel'stva; KOVALENKO, N.I., tekhnicheskiy redaktor

[Heating performance of flame metallurgical furnaces] Teplovaia rabota plamennykh metallurgicheskikh pechei. Sverdlovsk, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, Sverdlovskoe otd-nie, 1956. 367 p. (MLRA 9:10)
(Metallurgical furnaces)

TIMOFEYEV, V. N.

USSR/Fluid Mechanics

Abs Jour: Ref Zhur-Mekhanika, No 5, 1957, 5706

Author : Timofeyev, V. N., Uspenskiy, V. A.
Inst :
Title : Convection heat exchange in the combustion of gas fuel.

Orig Pub: Izv. AN SSSR, Otd. Techn. N., 1956, No 9, 111-114.

Abstract: Results of experiments in the heat exchange in a burning jet are presented. The difference in the temperatures of the gas and medium was of the order of 1200°. The results of the experiments are presented in a graph of the dependence of the Nusselt Number on the Reynolds Number, in which the physical characteristics of the flow are taken at the temperature of the gas. The results are compared with experiments without combustion. The curves do not differ appreciably from each other. Results of experiments with heat output from the wall to the flow, in a temperature range of 25--100°, are also cited. Five titles listed in bibliography.

Card 1/1

TIMOFEYEV, V. N.

C-6

USSR/Nuclear Physics

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 11263

Author : Timofeyev, V.N., Nevskiy, A.S.

Inst : Not given

Title : Remarks on the Article by M.A. Bak, K.A. Petrzhak, and Yu.F. Romanov "Irradiation from a Spherical Source in the Presence of Self-Absorption."

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 11, 2600-2601

Abstract : In connection with the above article (Referat Zhur Fizika, 1956, 25052) concerning the determination of radiation from a sphere with uniformly distributed sources of radiation in the presence of absorption of a portion of the energy radiated by the sources in the medium filling the sphere, it is noted that a similar problem was solved by Nusselt (Nusselt, W., Forsch. Ing. Wes., 1923, No 264).

Card 1/2

USSR/Nuclear Physics C-6

Abs Jour : Ref Zhur - Fizika, No 5, 1957, 11263

An elementary derivation of the formula obtained by Bak et al is given.

Card 2/2

ТИМОФЕЕВ, В.Н.

137-1958-3-4739

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 39 (USSR)

AUTHORS: Privalov, S. I., Timofeyev, V. N., Bokovikov, B.A.

TITLE: Reduction of Ore in a Layer (Vosstanovleniye rudy v sloye)

PERIODICAL: Vses. n.-i. in-t metallurg. teplotekhn. Byul. nauchno-tekhn. inform., 1957, Nr 2, pp 96-112

ABSTRACT: A study of the reduction process (RP) of ore in a stationary layer. In contrast to the blast furnace process, the RP in the laboratory setup was not stationary. Ore-bearing spherical briquets (8 to 10 mm in diameter) prepared from Vysokogorsk iron concentrate containing 62.4 - 62.9 percent Fe, were charged in amounts of 1.33 - 1.45 kg (a layer 160 mm high) into a cylindrical reaction container 80 mm in diameter and 312 mm high. A gas composed of 0.4 - 0.8 percent CO_2, 30-33 percent CO, and 0.2 - 0.8 percent H_2, with a humidity up to 0.05 percent, was heated to 750°, 800°, 850°, and 900°, and then passed through the container at velocities ranging from 0.25 m/sec to 1.1 m/sec. Samples of gas were withdrawn from every 40-mm section of the layer; the temperature was controlled by means of thermocouples located near the base of the upper and lower

Card 1/2

Reduction of Ore in a Layer

layers. By analyzing the gas samples, the degree of reduction, φ, was computed by the following formula: $\varphi = (S\ V \Delta CO_2 \cdot d\tau)/G_{O_2}$, where V is the gas consumption per unit of time, τ is the time, and G_{O_2} is the O_2 content of ore. At all temperatures the RP increases with increasing gas-flow velocities and decreases with increasing degree of reduction. It was discovered that in the RP, the briquets (particularly those made of pure Fe_2O_3) undergo a growth in volume (swelling), especially at the higher temperatures. A summary coefficient of the RP of ore in a layer, K ($cm^3/cm^2 \cdot sec$) representing a rate of speed, is defined, and methods for its determination are given. It is pointed out that the magnitude of K decreases significantly with increasing φ, and that it increases continuously and almost linearly as a function of increasing temperatures and velocities of the gases (in the temperature range between 750^o and 910^o).

L. Kh.

Card 2/2

NEVSKIY, Aleksandr Sergeyevich,; TIMOFEYEV, V.N., red.; KEL'NIK, V.P., red.izd-va; ZEF, Ye. M., tekhn. red.

[Radiant heat exchange in metallurgical furnaces and boiler furnaces] Teploobmen izlucheniem v metallurgicheskikh pechakh i topkakh kotlov. Sverdlovsk, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, Sverdlovskoe otd-nie, 1958. 368 p. (MIRA 11:11)

(Heat--Radiation and absorption)
(Furnaces)

TIMOFEYEV, V.M., kand.tekhn.nauk; KAVADEROV, A.V., doktor tekhn.nauk, prof.; NEVSKIY, A.S., kand.tekhn.nauk

Complete automation of open-hearth furnaces. Izv.vys.ucheb. zav.; chern.met. no.6:87-90 Je '58. (MIRA 12:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgicheskoy teplotekhniki.
(Open-hearth furnaces) (Automation)

KASHTANOVA, S.P.; TIMOFEYEV, V.N.

Investigating the coefficients of hydraulic resistance in checkers. Trudy Ural.politekh.inst. 73:182-187 '58.
(MIRA 12:8)

(Open-hearth furnaces) (Fluid mechanics)

NEVSKIY, Aleksandr Sergeyevich; TIMOFEYEV, V.N., kand.tekhn.nauk, retsenzent; KAVADEROV, A.V., doktor tekhn.nauk, red.; SYRCHINA, M.M., red. izd-va; TURKINA, Ye.D., tekhn.red.

[Application of the similitude theory to the study of thermal processes in heating furnaces] Primenenie teorii podobiia k izucheniiu teplovoi raboty negrevatel'nykh pechei. Sverdlovsk, Gos. nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, Sverdlovskoe otd-nie, 1960. 126 p. (MIRA 13:5)
(Furnaces, Heating--Models) (Dimensional analysis)

TIMOFEYEV, V. N.

18.3200

77442
SOV/133-60-1-3/30

AUTHORS: Privalov, S. I. (Candidate of Technical Sciences), Timofeyev, V. N. (Candidate of Technical Sciences), and Bokovikov, B. A. (Engineer)

TITLE: Investigation of Reduction Process in Ore Bed

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ABSTRACT: The article discusses an experimental investigation (on the fire model) of the reduction process in the immobile ore bed, and a development of speed characteristics for analytical calculations of the process under conditions of a "counter flow" of ore and gas. The work was undertaken in connection with growing intensification and coming automation of blast furnace work. The authors mention the work of B. I. Kitayev (B. I. Kitayev, Yu. G. Yaroshenko, et al., The Development of Heat Exchange and Reduction Processes in the Counter Flow, Transactions of UPI imeni Kirov, 1951; B. I. Kitayev, Stal', 1954, Nr 8) who was the

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first to consider the development of the reduction process along the height of blast furnace by analogy with heat exchange processes in connection with similarity of the phenomena of damping of the temperature and concentration potential of gas. The early American experiment with the Mesabi Range ores (W. Wetherill, C. Furnas, Industrial and Engineering Chemistry, 1934, 26, Nr 9); the mathematical analysis of A. P. Yem, who worked under the direction of S. T. Rostovtsev on the kinetics of the process of reduction of ore grains by hydrogen; the work of A. N. Ramm and Yu. P. Svintsov (A. N. Ramm and Yu. P. Svintsov, Study of Reduction of Iron Ores by Gases Under the Conditions of Counter Flow of Ore and Gases, Transactions LPI imeni Kalinina, issue 179, 1955) and of B. Stal' khano (Study of the Process of Reduction in the Lump of Iron Ore, Domez, 1931, Nr 6, A review) are referred to. The authors derive an equation for the summary coefficient of the speed of process K_{Σ}:

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$$K_{\Sigma} = \frac{V_{\Gamma}}{2(1+K)fH} \ln \frac{CO' - K CO_2'}{CO'' - K CO_2''}, \quad (7)$$

where K_{Σ} = a summary coefficient of speed of reduction representing an average speed (cm^3/sec) of removal of oxygen through one cm^2 of external surface of ore lumps; V_{Γ} = amount of gas passing through the layer (cm^3/sec); K = averaged constant of equilibrium of reduction reactions; f = external surface of ore lumps in unit of layer volume (cm^2/cm^3); F = cross section of layer (cm^2); CO', CO_2', CO'', CO''_2 = concentrations in incoming gas; H = total height of layer in cm. In 1954 the All-Union Scientific Research Institute of Metallurgical Technology (VNIIMT) built an experimental installation with fire model of the immobile ore bed for study of the dynamics of reduction processes. In 1958 VNIIMT built a second experimental installation

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(with fire model) of the "counter flow" of ore and gas for evaluation of the effect of charge movement and for the development of reduction calculation methods in the "counter flow" (see Fig. 13).

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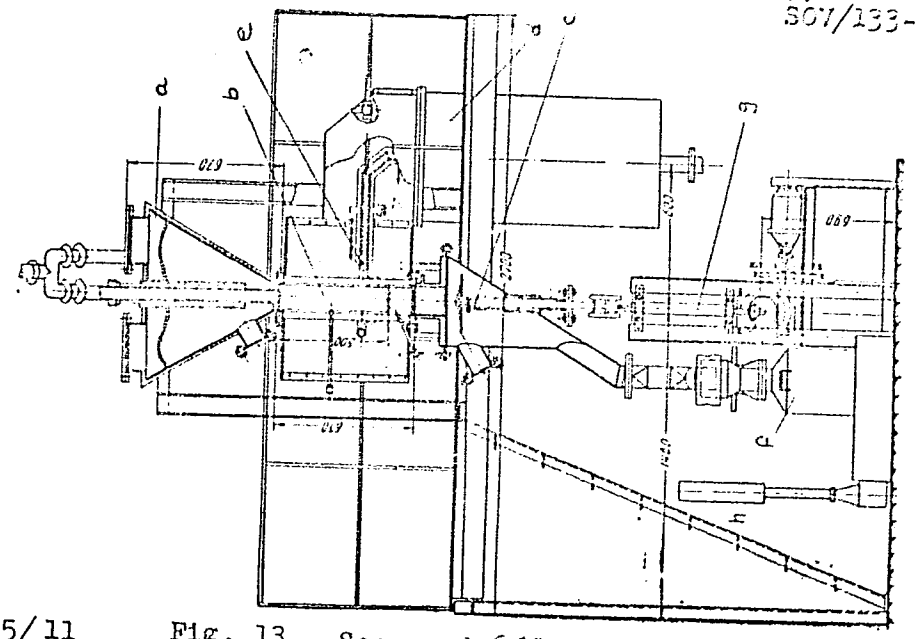

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Fig. 13. See card 6/11 for Caption

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See Card 7/11 for Fig. 13.

Fig. 13. Experimental installation for investigation of ore reduction in counter flow: (a) ore hopper, 150 kg capacity; (b) diameter of furnace stack, 130 mm; height of reduction zone, 500 mm; volumetric velocity of gas, m^3/m^2 sec = 0.76; productivity of installation (by ore), 20 kg/hr; (c) rotary table; (d) gas preheater; (e) six tuyeres; (f) receiving containers; (g) power drive; (h) scales.

The experimental installation for study of the reduction process in the layer; the results of experiments; the methods of calculation of reduction process in the counter flow; and the experimental study of reduction process in counter flow are described. The calculations (at given changes of temperature and the speed of gas along the height of ore layer, i.e., with known K_Σ and K) showed the relationship between the degree of

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ore reduction and accumulation of CO_2 and height of the layer (see Fig. 12). The solution was worked out by B. A. Bokovikov with participation of V. M. Malkin.

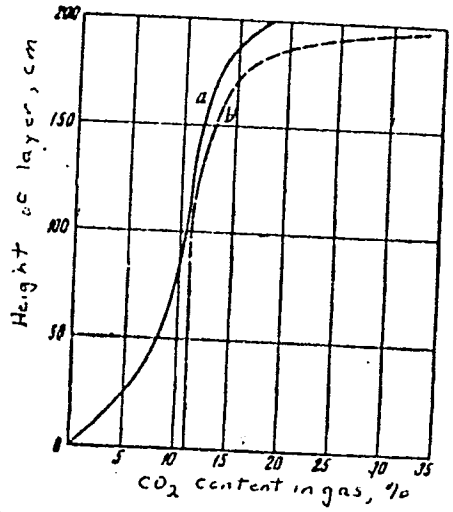

Fig. 12. Accumulation of CO_2 along height of ore layer during counter flow process (pellets, 25 mm diameter; gas velocity, 0.75 m/sec; 33% CO; temperature 900° C. (a) actual concentration of CO_2; (b) equilibrium concentration of CO_2.

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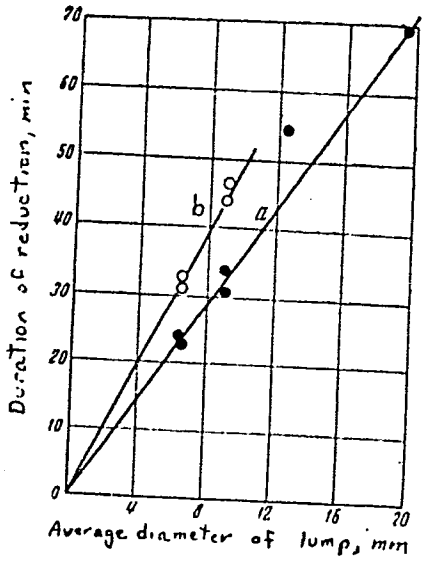

Fig. 7. Relationship between duration of reduction up to 50% (a); up to 60% (b) at 8500 C, and average diameter of pellets.

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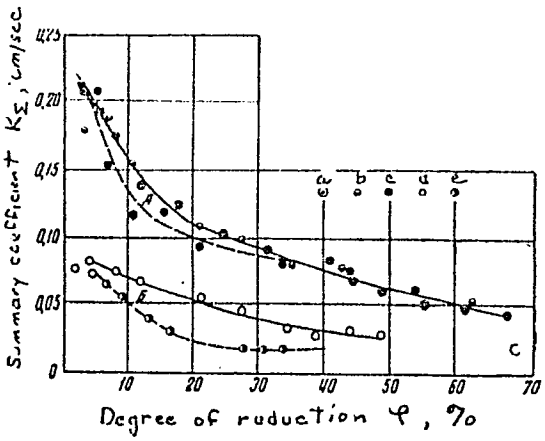

Fig. 8. Relationship between summary coefficient K_Σ and degree of reduction at 850° C, and various initial concentrations of CO_2 (A) or FeO content in pellets (B). (a) (1.65% CO_2); (b) (3.60% CO_2); (c) (5.6% CO_2) (d) 6.0% FeO); (3) (14.39% FeO).

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